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Chapter 12- Conducting Guided, Virtual Homework Sessions to Support Student Success During COVID Campus Closures

Rebecca Campbell
New Mexico State University, rebecca.campbell@nau.edu

Kevin Kelly
San Francisco State University, kkelly@sfsu.edu

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CONDUCTING GUIDED, VIRTUAL HOMEWORK SESSIONS TO SUPPORT STUDENT SUCCESS DURING COVID CAMPUS CLOSURES

Rebecca Campbell and Kevin Kelly

Author Note

Correspondence concerning this article should be addressed to Rebecca Campbell, New Mexico State University. Contact: RebeccaCampbellPHD@gmail.com.

College students have long used community-based practices such as study halls, review sessions, study groups, homework buddies, and the like as academic strategies to support their learning (Hogan, 1999; Madland & Richards, 2019; Thalluri et al., 2014). With increased access to online conferencing capabilities, working in community has been adapted by faculty who have used the technology to participate in virtual write-on-sites, writing retreats and writing sprints. Thus, it is no surprise that both faculty and learning centers saw the potential for creating virtual spaces for students to work together.

At the same time, simply creating a virtual space does not address common barriers that students face when learning in online environments, such as motivation, time, and support for completing learning tasks, academic skills, and social interaction (Muilenburg & Berge, 2005). To make the most of community-based study practices, teachers can help students overcome these barriers in several ways. Namely, they can create opportunities for students to (a) set aside time for studying, (b) solicit support from the instructor, (c) engage with classmates, and (d) complete required course activities and assignments. Under normal circumstances, these actions aid students who choose to pursue virtual learning experiences. In cases where campuses must close due to natural disasters (e.g., wildfire, hurricane) or health emergencies (e.g., global pandemic), these same actions act as a lifeline for students who normally would not choose to learn online.

A virtual homework sprint (VHS)—sometimes called a "work sprint"—is a space where students gather to accomplish academic work. Much like a traditional study session, students bring assignments that they need to complete or materials that they need to study in preparation for an upcoming assessment. As we did

research for this article, we found references to similar sprints used as agile software development methods for project work (e.g., see scrum.org) and to agile learning practices that adopt the entire agile work structure. While the concepts may be connected historically, we did not adopt the VHS practice with an agile learning framework in mind.

Hosted on Zoom or a similar online video conference software, faculty facilitate each VHS using a structured time management technique. In our sessions, we start the semester using the Pomodoro Technique, which prescribes 25-minute periods of productivity with 5-minute breaks (Baker, 2018). Thus, the sessions used a simple format: (a) kickoff, (b) check-in, (c) work, (d) break, and (e) check-out, which is depicted in Figure 1.

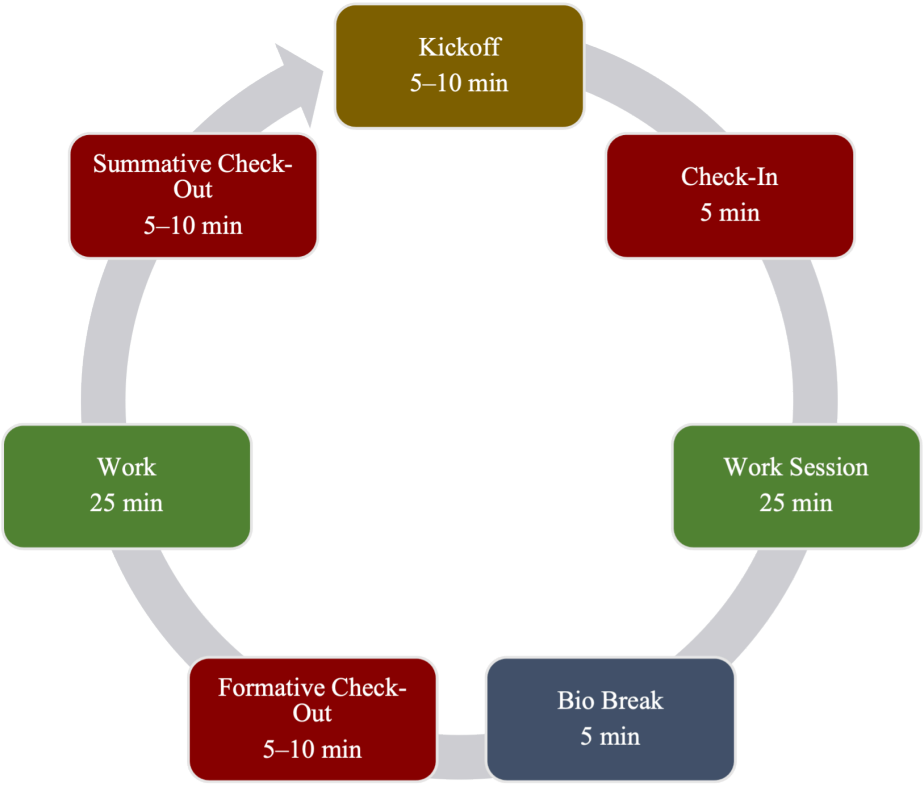

Figure 1 VHS Session Format

The following list more fully describes each step of the session format:

1. **Kickoff**: The faculty host greets students, who share where they are physically located. Faculty then check on each student and the student's household health, particularly related to COVD-19. Depending on the circumstances, faculty also check in on students in relation to other issues such as wildfires, hurricanes, and flooding. This step lasts only 5–10 minutes.

2. **Check-In**: Faculty host announces the time interval—either 25 minutes (pomodoro method) or 45 minutes, depending on student needs and interest. For 45-minute intervals, the relationship between the

task goal and the time allotment is discussed in the final follow-up. The instructor then asks the students to set productivity goals for the work period. In round-robin fashion, students share their incremental goals. When there are larger numbers of participants, students are put into breakout rooms to facilitate this more quickly. We did not require the students to work on assignments for their particular courses. Rather, the sole focus is to reserve and create space for students to be together and to be productive.

3. **Work**: Students work individually and are able to log out of Zoom or turn off video and audio. The faculty host provides cautions about using up bandwidth so that students feel comfortable logging out completely. Students who are working on group projects may work together in breakout rooms.

    1. *Set Timers*: To foster self-directed learning skills, the faculty host tells the students to set a timer, giving the time to report back both as a number of minutes and as a specific time. Students not in the same time zone are cautioned to set their timers (typically phone apps) for a number of minutes, rather than set an alarm for a specific time.

4. **Check-Outs**: After each time interval expires, students join the session again and briefly report out on whether or not they were able to meet the task goal within the time frame. Large numbers of students are broken out into breakout rooms to facilitate this moving quickly.

    1. *Formative Check-Out:* After completion of the first interval and break period, students set another productivity goal and the process repeats.

    2. *Summative Check-Out:* A final summative wrap-up is done at the conclusion of the last interval on a given day. During this time the faculty host asks questions to prompt students' metacognitive reflection. For example, they are prompted to think about the arc of their attention across each of the intervals, the appropriateness of the goals to the time allocated, and other issues related to focusing their attention for productivity.

5. **Break**: In some cases, the check-outs occur during the break, and in others the faculty host engages students in different types of activities to refresh focus and energy, such as deep breathing, simple yoga stretches, and bio breaks.

In the next section we describe our versions of the VHS practice, highlighting the rationale for adopting certain strategies, specific techniques that have worked well, and student reactions to the activity.

In Practice

Kevin's Implementation

Kevin's class was a fully online course even before the switch to emergency remote teaching and learning or "COVID-converted" courses in spring 2020. However, after learning about work sprints, he felt it would offer structured support to students who felt overwhelmed with the amount of online work they had to do at the end of a tumultuous semester. He scheduled two-hour blocks of time on four different weekdays immediately before and during finals week. The two-hour blocks included times that (a) started before typical class start times and work hours (7:30–9:30 a.m.), (b) ran during typical midday breaks in class and work schedules (11:30 a.m.–1:30 p.m.), and (c) started after typical class times and work hours (6:00–8:00 p.m.).

Kevin began the process by providing basic information about work sprints via an announcement and an information page in the learning management system (LMS). The announcement and information page both contained proactive answers to student questions—What are work sprints? When are the work sprints? How do work sprints work? Why participate in work sprints? Who can participate in work sprints? Where are the work sprints?—He set up a poll in the LMS for students to share their intentions to join with no obligation to commit. On each day with a work sprint block, he sent out morning reminders via a direct email to the class and a free opt-in text message (remind.com).

Fifteen of Kevin's 50 students joined at least one 30-minute sprint, with five attending at least one sprint every day and one student attending 13 of the 16 sprints. Students could earn five bonus points for attending each sprint, and an additional five for attending all four sprints on a specific day. Each 30-minute session followed a variation of the pomodoro method described above, outlined in the following steps:

- During the kickoff, Kevin welcomed everyone and explained the process for first-time "sprinters." He encouraged his students to work on whatever project had the highest priority, even if it was not for his class.
- During the brief check-in portion, students began by introducing themselves to any newcomers and sharing their learning goal for that time slot. Kevin shared last, modeling by sharing his own goals, holding up his phone to the camera, and starting the timer.
- During the work portion, students worked independently to complete their self-identified learning tasks. Some students chose to turn off their cameras as they worked, while others kept them on. As necessary, students asked questions via chat or using their microphone.
- During the check-out portion, students shared what they accomplished in relation to their original goal, as well as any insights about productivity or setting realistic expectations. Drawing upon a free resource

from Indiana University (2013), Kevin asked clarifying and probing questions to encourage deeper reflections. Note: Kevin conducted the check-out before the break, so all students could share their reflections. This supports students who must leave after a given work sprint cycle to go to work, attend another class, or take care of a personal or family obligation. After the last sprint of the day, Kevin conducted a short wrap-up to get feedback from students about what they liked and what they would change about the work sprint activity.

- During the break portion, everyone took a brief "bio-break"—e.g., to drink water, use the restroom, and/or stand up and stretch.

Rebecca's Implementation

Rebecca's course was designed as both a blended, flipped course with students completing readings and knowledge acquisition activities prior to Tuesday's class session. The VHS were offered at the beginning of the term and explained in a narrated slideshow posted in the LMS. Similar to Kevin's announcement page, the video addressed the concept of the VHS, the format, what work could be completed during the sessions, and the benefits of working together. Students were offered virtual homework sessions during each Thursday's regularly scheduled class time as well as during a block on Wednesday afternoons.

Attendance was optional but encouraged with extra credit. After the transition to emergency remote teaching (Hodges et al., 2020), the course became fully and asynchronously online. The homework sprints were maintained as a staple that ensured students had a place to gather and interact with both each other and with Rebecca. Thirty of Rebecca's 90 students participated in at least one session and a core subgroup emerged that attended them all. Each homework session followed a variation of the pomodoro method described above, outlined in the following steps:

- During the brief check-in portion, students began by introducing themselves, where they were logging in from, and their productivity goals. Rebecca also shared her work goals for the session to model that she was working "with" the students and her approaches to matching tasks to segments of time. After the first few weeks, the group moved from the classic 25-minute work/5-minute break intervals to 45 minutes of work and the group discussed the merits of both 25- and 45-minute intervals.

- During the work portion, students worked independently. For many students in Arizona, learning from home was complicated by inconsistent and inadequate access to the internet. This was particularly true for our Native American students who coped with the additional restrictions of curfews. Thus, students were encouraged to participate in whatever way possible, which ranged from students using the Zoom phone app, to never turning on their cameras, or students being fully visible from laptops in areas with strong bandwidth. To further accommodate these different scenarios, as well as the cost of internet

access, students were allowed to log out of Zoom completely during the work segments.

- During the interval breaks, everyone was encouraged to take bio-breaks, refresh hydration, and share their progress. The last aspect of the break was spent setting another interval productivity goal and setting timers.

- Similar to Kevin's check-out segment, Rebecca's students shared whether they had met their productivity goals, and metacognitive reflections about the effectiveness of their attention-monitoring and goal-setting. Check-outs that followed the 45-minute work intervals had more time available and so students were asked reflective questions about both self-regulation and their overall self-care and coping strategies related to the pandemic. For example, one week, students reflected and shared an area in which they were giving themselves "grace over guilt." Another week, students were asked about losses for which they were grieving and in community, their classmates brainstormed opportunities for micro-doses of those losses. For example, one student was grieving the loss of interacting with the third graders at her practicum site. Her classmates suggested micro-doses of interactions such as reading to them on Zoom, sending them messages via the email through the classroom teacher or writing them cards.

VHS and Effective Pedagogy

The VHS has several ties to different effective pedagogies. In this section, we will connect how the practices inherent in the strategy connect to the pedagogies of care, sense of belonging and self-regulated learning (see Figure 2).

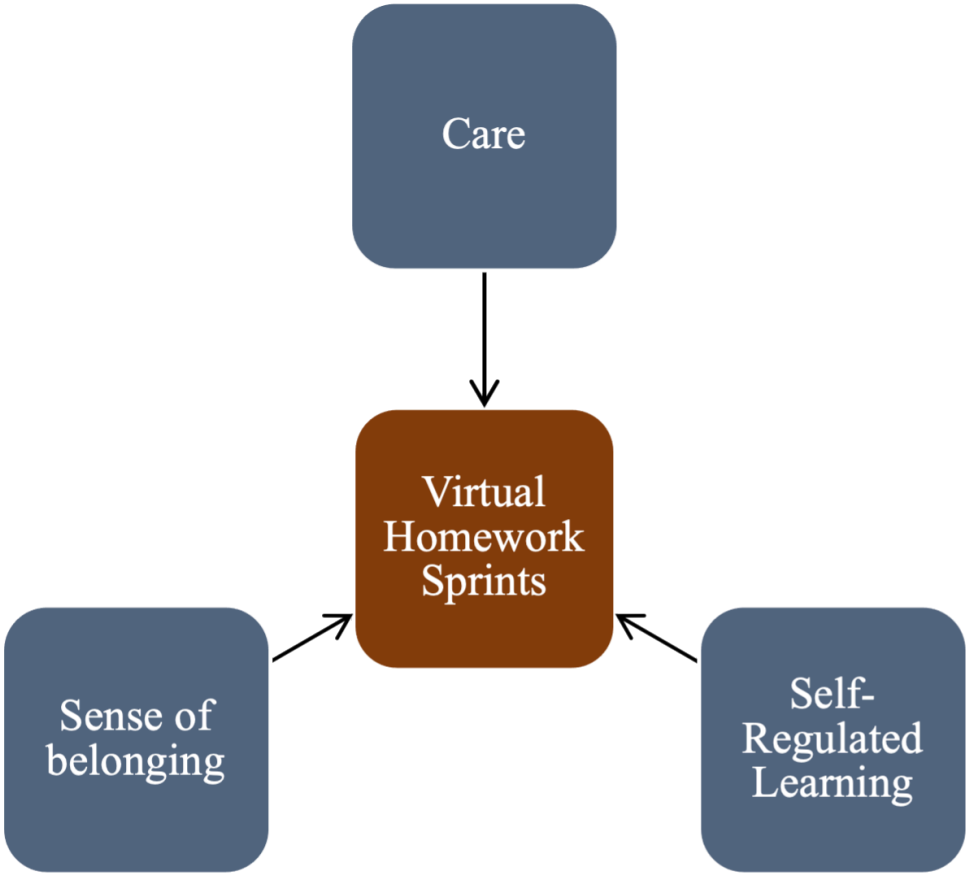

Figure 2 Pedagogies Connected to Virtual Homework Sprints

Care

Research has linked students' perceptions that their faculty cared about them to their perceptions of good teaching (Anderson et al., 2019). Care also matters to student success as students are more likely to listen to faculty who are empathetic and when students think they matter to them (McNair et al., 2016; Noddings, 1992).

By starting each VHS with a well-being check, faculty and classmates were able to demonstrate their care and concern for each other's health and learning environment. This established the context of "students as human" (Mushtare & Kane, 2020). The sharing that resulted from this check-in also fostered students' sense of belonging within the class community (Thomas et al., 2014).

During the summative check-out, powerful questions such as "What are you giving yourself grace over guilt about this week?" and "What are you most missing during the pandemic?" allowed students to process their feelings of isolation and cope with the extreme levels of unstructured time. As they self-disclosed their struggles, their classmates voiced care in the form of empathy, concern, affirmations, and helpful strategies.

The caring community that developed during the summative check-out was profound, particularly considering the small amount of time that was devoted to this portion of the VHS.

Belonging

The VHS session provided a mechanism for students to create a sense of belonging by connecting with each other. Sense of belonging is a feeling of connectedness that is generated from the belief that one is important and is supported by peers, faculty, and family (Strayhorn, 2018). Sense of belonging can be fostered by creating positive interactions with students, particularly those that involve their peers and is directly related to college student success (Strayhorn, 2018). Moreover, research on sense of belonging indicates a significant positive effect on students of color (Anderson et al., 2019; Strayhorn, 2018).

In many of the surveys conducted over spring and summer 2020 (see https://mindwires.com/summary-of-covid-surveys/ for a list), students across and beyond the United States have complained about feeling disconnected from their classmates and teachers (Kelly, 2020). The VHS strategy provides one avenue for students to regain a sense of community. So, while the VHS primarily involves students working independently, the framework directly fosters students' ability to connect to their peers.

As students shared their progress reports and self-reflections during the 5-minute check-out periods, their classmates and the teacher would provide suggestions to addressing particular challenges or affirm students' progress and productivity. Sense of belonging was also furthered when faculty reflected on their own progress. The faculty reflections fostered feelings of safety for students to reflect on their own productivity, frustrations, and celebrations. Thus, students likened the work sprints to studying with their friends in the library before the campus closed due to COVID-19.

Self-Regulated Learning

Students are characterized as self-regulated learners when they are metacognitively, motivationally, and behaviorally playing an active role in their own learning (Zimmerman, 1986). A considerable body of research has demonstrated the relationship between SRL and academic achievement (Hofer et al., 1998). Zimmerman (2001b) described five underlying issues related to the development of students' self-regulation. This section explores how the VHS addresses each of these issues:

"What Motivates Students to Self-Regulate During Learning?" (Zimmerman, 2001b, p. 8)

The VHS sessions motivated students to study by offering extra-credit points for attending. Those points were the carrots that got them to our Zoom rooms. But to self-regulate their own learning, the format of the sessions fostered motivation and accountability by having students voice their goals for each incremental time

segment and reported back on goal attainment. In their wrap-up reflections, several students pointed to goal-setting as a practice that they would repeat on their own to hold themselves accountable while completing learning tasks. Students also reported that working alongside others—even virtually—helped motivate them to stay on task. They wanted to be able to report progress, not procrastination, in front of their peers.

"Through What Process or Procedure Do Students Become Self-Reactive or Self-Aware?" (Zimmerman, 2001b, p. 8)

To complete each incremental task goal, students had to more stringently monitor their attention because of the expectation that they would report on their level of successful task completion. This metacognitive practice encourages students not only to monitor their learning progress, but also to monitor their learning process (Isaacson & Fujita, 2006). During the 5-minute breaks, students had the opportunity to both reflect on how the previous interval went as well as actually pause their work. Strategies for becoming self-aware of the cues that signaled the need for a different learning strategy or a break were explicitly made part of the reflective aspect of the VHS.

"What Are the Key Processes or Responses That Self-Regulated Students Use to Attain Their Academic Goals?" (Zimmerman, 2001b, p. 8)

Setting a specific task goal for each 25-minute increment forced students to practice predicting how much time specific types of tasks would take. By reflecting on goal attainment, students were able to get feedback on their predictions that could be used to improve setting their next 25-minute task goal. To help students with these predictions at the beginning of each work sprint session, Kevin reminded them that their course's module overview pages include time-on-task estimates for each course activity.

Over time, we noticed that students came prepared for the VHS sessions with their goals for the increments already in place and that they expressed gratitude for how the VHS demonstrated the importance of allocating and committing to specific study time. Some students were able to use the time reserved for the homework sessions to set boundaries about their academic needs by creating "sugar lies," telling their households that they had class to ensure two hours of distraction-free focus during the VHS.

"How Does the Social and Physical Environment Affect Student Self-Regulated Learning?" (Zimmerman, 2001b, p. 8)

Doing homework in community, with breaks at 25-minute intervals created intense periods of focus with bursts of interruption. This style of studying is different from getting into a longer flow state where attention extends for longer periods of time and one's sense of time is lost. Thus, the protocol for VHS isn't universally applicable across all disciplines, content, or learning tasks, and it further honed each student's ability to plan for how to learn in specific contexts and environments.

Further, students who did not meet their incremental time goals were encouraged to think about whether the cause was a mismatch between time and task or a lack of attentional resources (Corno, 2001). This fostered the student's ability to adapt to both personal and contextual conditions, a hallmark of self-regulated learning (Zimmerman, 2000).

Students also noted how the time set aside for the VHS mimicked actual Zoom class time in that their household environments respectfully provided uninterrupted quiet time. Some students took that a step further by creating "sugar lies," telling their households that they had class to ensure two hours of distraction-free focus during the VHS.

"How Does a Learner Acquire the Capacity to Self-Regulate When Learning?" (Zimmerman, 2001b, p. 8)

SRL develops from social connections and modeling (Zimmerman, 2001a). By working in a community, students were able to observe self-regulated learning from both their instructors and their peers. These observations led to a deepening of their own awareness and use of SRL strategies. This explicit modeling of goal-setting, work, and reflection provided transparency (Winkelmes, 2019) or visibility (Hattie, 2012) that is directly linked to student achievement.

Implications and Future Practice

We identified a number of key takeaways from their collective experiences, listed here as implications supported by research and intentions for future practice:

Maximize Student–Faculty Interaction Opportunities

Decades of studies (e.g., Thompson, 2001; Lamport, 1993; Pascarella, 1980) have shown that both formal and informal student–faculty interactions have a positive effect on students' motivation and performance. The power of those interactions increases when focused on students' academic or professional goals (Cox & Orehovec, 2007). Based on these findings and our observations, we intend to allow students to take advantage of our time together beyond the prescribed work sprint activities. Rebecca will be adding office hours to her virtual homework sessions and will put herself and any student with a question in a breakout room apart from the main session. An upcoming feature of the Zoom video conference platform will allow students to assign themselves to specific breakout rooms, so they will not need to interrupt the other students with their questions.

Foster Student Accountability

Students are more likely to complete learning activities that are "structured to be authentic, public, and facilitative of peer interaction" (Indiana University CITL, n.d.). In a meta-analysis on accountability research, Abadzi (2017) reported that "mutual accountability . . . may have positive effects on performance." During a summative check-out, one of Kevin's students echoed this research by stating that having to report her progress in front of her peers encouraged her to stay focused on her learning tasks. She didn't want to be the one who reported that she got distracted and started shopping or surfing the Web. Accordingly, we will be more intentional as we leverage students' sense of accountability during the virtual homework sessions. To do this we will make sure each student reports how well they did in reaching their short-term goals, recognize successes, and offer suggestions about adjusting the scope of goals based on self-evaluation and reflection. Further, they will support students holding themselves accountable for joining work sprints by allowing them to sign up for special reminders (e.g., using a free text message service like remind.com).

Provide Guiding Questions to Support Student Self-Efficacy and Metacognition

Although work sprints involve a structured process, students also need help with setting and achieving attainable goals as well as inventing individual tasks related to learning outcomes. In her study of student metacognition in biology courses, Kimberly Tanner (2012) shared questions that teachers can pose to support students in planning, monitoring, and evaluating their work on a learning task. Rebecca created her own set of powerful questions to guide student work during the virtual sessions. She intends to take it a step further by scripting enough questions for an entire academic term and tagging them to indicate which are better for a small breakout groups versus for the whole class.

Increase Student Participation and Learning Equity With Flexibility

Over two dozen large-scale surveys were conducted to determine how college students were managing learning during the COVID-19 pandemic and how to best support those students (Kelly, 2020). Students identified numerous challenges related to participation in synchronous, virtual activities, including limited access to devices, a stable internet connection, and a quiet place to study; and competing priorities such as jobs or care for children or elderly parents. Students appreciate it when instructors provide flexible options and create "spaces that work." Both Kevin and Rebecca advertise the flexibility designed to support participation in the work sprints despite common challenges—e.g., students are allowed to turn their cameras off, log out while they work and then log in again to give a report when each sprint has ended, and use breakout rooms for side conversations or office hour consultations. We both also promote the strategic use of technology to increase students' options. For example, they provide suggestions for alternative participation

pathways, such as connecting to the work sprint via a mobile device while using analog resources to complete learning tasks (e.g., read a print-based textbook, write an essay with pen and paper).

Work sprints are not official class meetings, but they do require student time and attention. The instructors further support students where they are by sharing strategies for working with family members or roommates. For instance, they encourage students to create boundaries to have a period of quiet time or negotiate to use a shared device during a scheduled VHS or work sprint session.

Use Work Sprints in Other Academic Contexts

As stated above, virtual homework sessions use the agile work sprint methodology for learning purposes. We are aware of teaching and learning centers and professional organizations that host work sprints for higher-education faculty and staff using similar formats. Just as we used this strategy to build community and support students over distance, faculty development centers have used or may use the same strategy for professional development. In her Think Write Revise podcast, Dr. Katie Linder has publicized the use of writing sprints to support faculty who want to improve their academic writing (e.g., Linder, 2017). Kevin has begun using the work sprint model with colleagues to facilitate collaborative sessions for building a faculty development course related to learning equity in online courses. The addition of a fast feedback loop during the check-in reports allows each person to begin the next work cycle with informed goals and tasks.

In summary, virtual homework sessions serve as a low-cost, high-yield mechanism for fostering community, belonging, and self-regulated learning. As we hoped, the students reported that they were highly productive during these work sprints due to a feeling of accountability and community. Their ability to self-regulate their learning through goal-setting, attention-monitoring and metacognitive reflection was evident from the discussion breaks and check-out segments. Moreover, the strategy provides a forum for unpacking and humanizing what learning looks and feels like. This is a powerful tool for current practice during a pandemic and will continue to be essential for future practice as well.

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